Amendments to the Specification:

Please replace paragraphs [0001], [0005]-[0014], [0016], [0019], [0020], [0023]-[0029], [0033]-[0035], [0037], [0038] and [0040]-[0054] by currently amended paragraphs bearing same number and which have been amended as follows:

Begin amendments:

[0001] This invention relates to an endless traction band that is used to propel tracked vehicles comprising guide ~~lugs~~ horns on its inner surface where ~~lug~~ horn reinforcements are inserted to laterally reinforce the guide ~~lugs.~~ horns.

[0005] While endless traction bands using elastomeric materials are often desirable since they reduce damage to the terrain, reduce noise and allow access to various types of soil, they do have some drawbacks concerning their use. Once installed, the traction band is usually carried and maintained in tension by a plurality of rotating elements (wheels, sprockets, etc...) that are connected to the vehicle. The rotating elements cooperate with the inner surface of the traction band which comprises a plurality of guide horns (or guide lugs) and drive lugs, therefore ensuring power transmission and lateral support to the traction band. The guide ~~lug~~horns are disposed in rows along the circumference of the traction band in order to offer lateral guidance by restraining the relative motion of the wheel-band assembly. The band can therefore rotate due to its drive lugs meshing with the drive or sprocket wheel .

[0006] However, since elastomeric bands are more easily deformed than metal bands, the wear and the use of the traction band under extreme conditions sometimes lead to de-tracking occurrences. De-tracking is mostly initiated by a combined action of friction and interference between the wheels and the guide ~~lug~~horns, which induces a lateral deformation of the elastomeric guide ~~lug~~horns. At this stage, the wheels are misaligned with the traction band and as the traction band continues to rotate and the guide ~~lug~~horns keep on laterally deforming, the

rotating wheels sometimes climb on the lateral sides of the guide ~~lug~~horns, until de-tracking of the traction band is observed.

[0007] To avoid this problem, different guide ~~lug~~horn configurations have been created from various elastomeric compositions or shapes. For instance, Tsunoda et al. (US6,300,396B1) and Muramatsu et al. (US5,447,365 and 5,540,489) have inserted in the guide lugs plate-like member or a rod-like member (Tsunoda et al. US5,948,438). The members have some low-friction surfaces exposed to the outside of the guide lugs which contact and collide with the wheels. These low-friction materials reduce de-tracking occurrences but to be effective, they need a direct contact with a wheel. Also, the lateral movement of the guide lugs with respect to the track is not significantly diminished under high lateral loads, even if a member has been inserted in the guide lug.

[0008] In Hori (US5,380,076) and in Togashi et al. (5,295,741), core bars for crawler-type tracks are partially inserted in the elastomeric material, having a central portion which is not embedded in the elastomeric material and acts as a guide ~~lug~~horn, and winged portions which are embedded in the elastomeric material. Even though core bars are rigidly connected with respect to the track, the "guide ~~lug~~horn" portion of the central portion has a shape configuration which is restricted to the configuration of the wheels.

[0009] Since it is almost impossible to laterally or longitudinally enlarge the guide ~~lug~~horns because of their localization into the spacing generated by each wheel assembly, de-tracking events may still occur, especially when such a traction band is installed on a heavy and fast vehicle, like a defense vehicle.

[0010] The present invention sets out to solve the problem associated with de-tracking events by providing laterally reinforced guide ~~lug~~horns.

[0011] The objective of this invention is to provide an innovative endless traction band which offers a workable solution to the de-tracking occurrences. The elastomeric bands are usually more easily deformed than metal bands. The wear and the use of the traction band under extreme conditions, like high lateral loads, sometimes initiates de-tracking events which are usually generated by a combined action of friction and interference between the wheels and the guide ~~lug~~horns.

[0012] In one embodiment, this invention introduces guide horn~~lug~~ reinforcements to the endless traction band made from elastomeric materials, in the form of sheet-like plates, reinforcement cords, rods or fabric destined to be inserted and integrally molded at a selected interval into the traction band. The ~~lug~~horn reinforcements are disposed in such numbers, as required, to enhance the lateral rigidity of the traction band with respect to de-tracking occurrences.

[0013] In a preferred embodiment, each ~~lug~~horn reinforcement laterally supports and reinforces a guide ~~lug~~horn and comprises a reinforcing portion and two stabilizing portions on each side of the reinforcing portion. The stabilizing sides in each stabilizing portion are preferably substantially flat, and embedded in the main band, and can either between the inner surface and the main tensile cords or between the main tensile cords and the outer surface.~~positioned over or under the main tensile chords in the main band body.~~

[0014] The reinforcing portion preferably comprises reinforced members which longitudinally extend as vertically inclined planar area and connect to each other at an angle. In the case of plates, embossing may be used in the inclined planar area to optimize the lateral rigidity of the ~~lug~~horn reinforcements.

[0016] ~~Lug~~Horn reinforcements help to laterally stabilize the wheels/traction band assembly as the traction band rotates. The guide ~~lug~~horns lateral deformation by the wheels is reduced and preferably prevented by the ~~lug~~horn reinforcements which provide a rigid lateral support. The

reinforced members, with their vertically inclined planar areas, first support and then redirect the misaligned wheels toward their usual operating position.

[0019] at least one row of <u>guide horns</u>~~lugs~~ which protrude along said inner surface of said traction band;

[0020] <u>guide horn</u>~~lug~~ reinforcements having a reinforcing portion extending in said ~~lug~~<u>horn</u>s and connected to at least one stabilizing portion embedded in said band body.

[0023] Figure 1 is an isometric view of a <u>guide horn</u>~~lug~~ reinforcement in accordance with the invention;

[0024] Figure 2 is an isometric view illustrating the <u>guide horn</u>~~lug~~ reinforcement shown in fig. 1, which is partly embedded in a guide ~~lug~~<u>horn</u>.

[0025] Figure 3 is a longitudinal view illustrating the <u>guide horn</u>~~lug~~ reinforcement shown in fig. 1.

[0026] Figure 4 is a lateral view of a tracked vehicle making use of an endless traction band equipped with the <u>guide horn</u>~~lug~~ reinforcements shown in figure 1.

[0027] Figure 5 is a section view taken along line 5-5 in figure 4 showing one embodiment of the <u>guide horn</u>~~lug~~ reinforcement.

[0028] Figure 6 is a section view taken along line 5-5 in figure 4 showing another embodiment of the <u>guide horn</u>~~lug~~ reinforcement.

[0029] Figure 7 is top view of a traction band equipped with the <u>guide horn</u>~~lug~~ reinforcements shown in fig. 1.

[0033] Figure 11 is a section view taken along line 5-5 in figure 4 showing another embodiment of the guide horn~~lug~~ reinforcement.

[0034] A traction band equipped with ~~lug~~horn reinforcements is described hereinafter according to a preferred embodiment of the present invention and illustrated in the appended figures.

[0035] Figure 1 shows an isometric representation of a ~~lug~~horn reinforcement 160 which consist of a formed plate, destined to be inserted and integrally molded into an endless rubber traction band, in order to enhance its lateral resistance with regards to de-tracking occurrences.

[0037] Figures 5 and 7 illustrate into more details the general configuration of a traction band 120 in accordance with the invention and show how it is mounted with respect to the vehicle 100 and its plurality of wheels (130, 140 and 150). In this embodiment, the traction band comprises a central band portion 173 and lateral band portions 171,172 which are located on each side of the central band portion 173. The inner surface 128 cooperates with the plurality of wheels 150 comprising sections (151 and 152 in figure 5) with the provision of rows of lateral drive lugs (121,122) and a row of central guide ~~lug~~horns 125 along the circumference of the traction band 120. Alternatively, as shown in Figure 11, the drive lugs 522 are located in a central row and the guide ~~lug~~horns ~~(522,526)~~(525,526) are in two lateral rows on each side of the row of drive lugs 522.

[0038] The outer surface 126 supports the lug profiles 127 which come in multiple designs to adapt to various types of soil. The lug profiles 127 usually span over the entire lateral width of the endless elastomeric traction band 120 and along its entire circumference. Each lug profiles 127 are separated by flat areas (not shown)~~129~~, and their alternate sequence provides stability in rotation along the vertical axis (twisting) and the longitudinal axis (torsion) of the traction band, therefore minimizing de-tracking occurrences and ensuring a proper vehicle traction on snow.

[0040] As seen in figures 4 and 5, the endless traction band 120 rotates around the tension wheel 140 and a plurality of road wheels 150, comprising a first section 151 and a second section 152. The row of guide ~~lug~~horns 125 is maintained in between the wheels (151,152) and therefore helps to laterally stabilize the wheels/traction band assembly as the traction band 120 rotates. When the traction band 120 is used under extreme conditions, de-tracking events sometimes occur, even if such guide ~~lug~~horns 125 are used.

[0041] It has been found that when ~~lug~~horn reinforcements 160 are provided in the guide ~~lug~~horns 125, de-tracking occurrences are minimized, even after a combined action of high lateral forces on the traction band 120 are coupled with friction and interference between the wheels (130, 140 and 150) and the guide ~~lug~~horns 125.

[0042] For instance, when the traction band 120 in operation sees high levels of lateral forces, the guide ~~lug~~horns 125 laterally deform as some of the plurality of wheels (130, 140 or 150) start interfering and sometimes climbing on the guide ~~lug~~horns 125. At this stage, for traction bands of the prior art, a de-tracking event is initiated. However, the use of ~~lug~~horn reinforcements 160 significantly reduces the occurrence of de-tracking by considerably limiting the deformation of the elastomeric material with the provision of a rigid lateral support.

[0043] A ~~lug~~horn reinforcement 160 is inserted in the traction band 120 to laterally support and reinforce the guide ~~lug~~horns 125. In Figure 7, each pitch 175 comprises a ~~lug~~horn reinforcement (160 and shown in dotted line) which is preferably aligned in a lateral direction with a guide ~~lug~~horn 125 and the drive lugs (121,122), along the entire circumference of the traction band 120.

[0044] Figures 1 and 3 describe in detail the physical characteristics of a ~~lug~~horn reinforcement 160 in a preferred embodiment. Each ~~lug~~horn reinforcement 160 either consists in a formed plate, a matrix of cords, rods or fabric which comprises a reinforcing portion 166 and two stabilizing portions (165,168), which are located on each side of the reinforcing portion 166. Any material that can be formed or allow the configuration or assembly of a more rigid structure than the elastomeric material, like for instance steels, textiles, polymers or other metal alloys, can be used.

[0045] The stabilizing portions (165,168) are preferably flat, since their requirement is to locate and maintain the position of the ~~lug~~horn reinforcement 160. As seen in Figure 5, the stabilizing portions (165,168) are embedded in the main band body 124 and located underneath the plurality of road wheels (151,152), under the vehicle's weight as the band 120 rotates. Preferably, the total width of the reinforcing portion 166 plus the two stabilizing portions (165,168) laterally extends at least as much as the lateral width 153 defined by the two longitudinally split sections (151,152) of wheels (150). The stabilizing portions (165,168) are embodied in the main band body 124 and positioned over the fibers 123, or under the fibers 123, as illustrated in Figure 6.

[0046] The reinforcing portion 166 comprises a formed plate or fabric structure, configured to provide tensional rigidity to the guide ~~lug~~horns 125 and which is preferably completely embedded in it, as shown in Figure 2.

[0047] In the preferred embodiment illustrated in Figure 1 and 5, the reinforcing portion 166 comprises inclined planar areas (161,162) which extend in a longitudinal direction and connect to each other at an angle α. The angle α is selected so that each inclined planar areas (161,162) is contained within the volume delimited by the corresponding guide ~~lug~~horn 125, which in turn has a lateral width constraint. Indeed, the central band portion 173 of Figure 5, where the guide ~~lug~~horn 125 is located, is generally determined by the fixed spacing between the two longitudinally split sections (151,152) of wheels 150.

[0048] In order to optimize the lateral rigidity of the ~~lug~~horn reinforcements 160, embossings (163,164) can be added to the inclined planar areas (161,162) when a rigid material is used. High lateral loads on the ~~lug~~horn reinforcement 160 induce moments on the reinforced members 161 along a longitudinal axis, especially when they are applied at a higher distance from the stabilizing portions (165,168). A formed plate has less inertial resistance to such a moment, due to its small thickness 169, but embossings (163,164) enhance its inertial resistance to lateral forces. The embossings (163,164) can be concave or convex, of any shape or size, being only limited by the available volume space inside each guide ~~lug~~horn 125. Other strengthening means

can also be added to the reinforcing portion 166 to provide a similar lateral rigidity as the embossings (163,164) does for the inclined planar area (161,162).

[0049] In the second embodiment shown in Figure 8, ~~lug~~horn reinforcements 260 are embedded in each pitch 275 of the traction band 220. A ~~lug~~horn reinforcement 260 comprises a reinforcing portion 266, mainly located in the guide ~~lug~~horn 225 and two stabilizing portions (265,268), each embedded in the band 220 and mostly between the drive lug (221,222) and the guide ~~lug~~horn 225. The reinforcing portion 266 has inclined planar areas (261,262), with or without embossings (263,264). The inclined planar areas (261,262) extend in a longitudinal direction, connect to each other at an angle α. (not shown) and are contained within the volume of a guide ~~lug~~horn 225. The stabilizing portions (265,268) may be provided with two arms (265a,265b and 268a,268b) in a V-shaped configuration which offers a wider and more stable section of the stabilizing portion (265,268) under the wheels.

[0050] Figure 9 illustrates a third embodiment of the invention, where each pitch 375 of the traction band 320 comprises a ~~lug~~horn reinforcement 360 having a reinforcing portion 366 and two stabilizing portions (365,368) on each side of the reinforcing portion 366. Each stabilizing portion (365,368) is embedded in the band body 324, mostly in-between the drive lug (321,322) and the guide ~~lug~~horn 325. The reinforcing portion 366 is made of two longitudinally extending inclined planar areas (361,362), connected to each other at an angle α. In this embodiment, each inclined planar area (361,362) has a longitudinally variable width in order to occupy, and therefore reinforce, most of the volume of the guide ~~lug~~horns 325.

[0051] A fourth embodiment is described in figure 10. In each pitch 475 of the traction band 420, a ~~lug~~horn reinforcement 460 is made of a selected number of cords or rods 455. Each cords or rods 455 have a lateral bi-dimensional profile comprising a reinforcing portion 466 and a pair of stabilizing portion (465,468) located on each side of the reinforcing portion 466. The reinforcing portion 466 is mainly located in the guide ~~lug~~horn 425 and the longitudinal juxtaposition of each cords or rods 455 defines two inclined planar areas (461,462) at an angle α (not shown). The

stabilizing portions (465,468) are embedded in the band body 424, mostly located between the drive lug (421,422) and the guide ~~lug~~horn 425.

[0052] As seen in figure 4 and 5, the use of ~~lug~~horn reinforcements 160 in a traction band 120 significantly reduces de-tracking events by reducing the deformation of the elastomeric material in the guide ~~lug~~horns 125. This phenomenon is firstly explained by the stabilizing portions (165,168) being embedded into the traction band 120 and located under the weight of at least part of the plurality of road wheels 150, therefore providing a laterally rigid and stable ~~lug~~horn reinforcement with respect to the traction band 120. The reinforcing portion 166 act to significantly reduce the relative lateral movement between the rotating traction band 120 and the wheel 150 nearest to the high lateral load which is seeking to cause a de-tracking event. The inclined planar area (161,162), first supports and then redirects the misaligned wheel 150 toward the lateral band portions (171,172) as the band continues to rotate around the plurality of wheels (130, 140 and 150). The vehicle 100 can therefore continue to move since the high lateral load source on the terrain is absorbed by the traction band 120 and the de-tracking event avoided.

[0053] If the high lateral load source is felt on one of the arched portion of the traction band 120, which represents the band portions near the tension wheel 140 or the sprocket wheel 130, the lateral support offered by the ~~lug~~horn reinforcements 160 is also enhanced since the guide ~~lug~~horns 125 get closer to one another in that portion of the band 120. Consecutive guide ~~lug~~horns 125 in those arched portions have closer ~~lug~~horn reinforcements 160 with closer consecutive inclined planar areas (161,162) which provide a more integral lateral band support to the wheel/traction band assembly.

[0054] Another traction band embodiment which can be useful for other configurations of tracked vehicle is illustrated in figure 11. The traction band 520 has a reversed lug configuration when compared to the preferred embodiment of figure 5. On the central band portion 573, which is generally determined by the fixed spacing between the two longitudinally split sections (551,552) of wheels 550, one row of drive lugs 522 ensures power transmission from the vehicle to the traction band 520. Two rows of guide ~~lug~~horns (525,526) are located on each lateral band

portions (571,572) and are reinforced by ~~lug~~horn reinforcements (560,580), above the main tensile cords 523. Each ~~lug~~horn reinforcement (560,580) comprises a reinforcing portion (566,586) being contained in each guide ~~lug~~horn (525,526) and at least one stabilizing portion (565,585) embedded in the band body 524. The reinforcing portion (566,586) can be made in any shape or form, but preferably has the same configuration as the other embodiments stated hereinabove. In Figure 11, two inclined planar areas (561,562 and 581,582)) are connected to each other as the preferred embodiment. The stabilizing portions (565,585) extend laterally from the inclined planar areas (562,582) and covers at least the lateral band portions (571,572).

End amendments.